



# Picture of the Week: Raising the bar on carbon capture

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## Raising the bar on carbon capture

In the United States, industry produces more than 3 billion metric tons of CO<sub>2</sub> each year, around two-thirds of which come from fossil-fuel-based electricity generation. The image above illustrates the relative magnitude and spatial distribution of CO<sub>2</sub> emissions across the United States. One technique for reducing CO<sub>2</sub> emissions is carbon capture and storage. Researchers at Los Alamos National Laboratory, The Ohio State University, and the National Energy Technology Laboratory [have developed a case study](#) showing how CO<sub>2</sub> can be captured from ethylene manufacturing plants along the Gulf Coast in Texas and used for enhanced oil recovery at nearby oil production facilities. This approach could lower the “wells-to-wheels” carbon footprint of producing oil by around one third.

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While fossil-fuels-based electricity generation produces the majority of U.S. CO<sub>2</sub> emissions, more than 1 billion metric tons of CO<sub>2</sub> come from other industries including petroleum refining, chemical manufacturing, oil and gas production, ethanol production, iron/steel manufacture, and cement production. Major areas of non-power CO<sub>2</sub> production include the Midwest (ethanol production), the Gulf Coast (petroleum refining), and California (petroleum refining).

Los Alamos researchers created the image using data from several U.S. Environmental Protection Agency databases and [previous work by the team](#) using ESRI's ArcGlobe software and customized algorithms. Red bars represent proportionately more CO<sub>2</sub> emissions from electricity generation (coal, gas, and oil), green bars represent CO<sub>2</sub> emissions by other sources (such as ethanol production, iron-steel production, and cement manufacture), and yellow/orange bars represent a mix of electricity and non-electricity sources. For more information contact Richard Middleton ([rsm@lanl.gov](mailto:rsm@lanl.gov)).

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